

**RESIN/BINDER SYSTEM FOR PREPARATION OF
LOW ODOR FIBERGLASS PRODUCTS**

ABSTRACT OF THE DISCLOSURE

Infinitely water soluble, storage stable, low molecular weight, amine-modified resins/binders (*e.g.*, phenol-formaldehyde resole resins and binders made therefrom) are used to produce low odor fiberglass products, such as fiberglass insulation for automobile headliners and room dividers. The cured, bonded fiberglass products have low TMA (trimethylamine) emission because the free formaldehyde in the resin has been scavenged with melamine, which resists thermal decomposition, and because the binder contains a relatively low urea content, which is a TMA contributor. The resole resin production process includes adding two different formaldehyde scavengers (*e.g.*, melamine and urea) to produce a modified phenol-formaldehyde resole resin. This resole resin is produced into a binder by mixing with water, optionally in the presence of a latent acid catalyst (*e.g.*, an ammonium salt of a strong acid). The binder can be applied to a fiberglass base material, dried, stored for an extended time period, and then cured and shaped into a final desired shape.